AD 718660

U. S. ARMY TEST AND EVALUATION COMMAND
COMMON SERVICE TEST PROCEDURE

FIELD STORAGE - MISSILES AND ROCKETS

1. OBJECTIVE

The purpose of this Materiel Test Procedure (MTP) is to set forth testing techniques and methodology necessary to evaluate the effects of field storage on the ease of handling, monitoring, testing, preparation for launching, launching, and overall effectiveness of missile or rockets.

2. BACKGROUND

In the zone of interior rockets and missiles normally shall be stored in buildings or coverage designed to minimize deterioration. In combat zones, however, they may be subjected to conditions with less than optimum storage desirability. Open field storage presents the most severe exposure with a minimum of protection, a missile or rocket (to include propulsion, guidance, and warhead sections) must be able to withstand the effects of field storage for periods of 3 months or more and then be launched without loss of effectiveness or ease of handling and preparation.

3. REQUIRED EQUIPMENT

a. Standard Storage Igloos
b. Tarpaulins
c. Dunnage
d. Weapons Transporters for system being tested
e. Photographic Equipment
f. As required in the MTP's applicable to the specific rockets or missile system being tested.

4. REFERENCES

A. TM 9-1300-206 Care, Handling, Preservation, and Destruction of Ammunition
B. AMCR 385-224 U. S. Army Materiel Command Safety Manual
C. Range Safety Regulations
D. Qualitative Materiel Requirements (QMR) for the test item
E. MTP applicable to the test item
F. MTP 5-3-500, Preoperational Inspection and Physical Characteristics
G. MTP 5-3-507, Human Factor Engineering
H. MTP 5-3-510, Safety Hazards
I. MTP 10-3-501, Operator Training and Familiarization

5. SCOPE

5.1 SUMMARY

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This MTP outlines the methods used to determine the capability of the test item to withstand field storage conditions including the following areas:

a. Preparation for Test - A verification of the test item's conformance to QMR's prior to testing, training of test personnel and selection of storage sites.

b. Storage - A study to the effects of field storage on the test item including:

1) Periodic inspections
2) Preventive maintenance

c. Preparation for Launching - A study to determine the impact of field storage on the test item's ease of handling and preparation for firing.

d. Launching - An evaluation to determine the impact of field storage on the overall effectiveness of the test item.

5.2 LIMITATIONS

None

6. PROCEDURES

6.1 PREPARATION FOR TEST

6.1.1 Preoperational Inspection and Physical Characteristics

Perform the preoperational inspections and determine the physical characteristics of the test item as described in the applicable sections of MTP 5-3-500.

6.1.2 Personnel Training

a. Ensure the availability of personnel who have been trained using the criteria of MTP 10-3-501 in the handling, storing, and launching of test items.

b. Record the following for all service personnel:

1) Rank
2) MOS
3) Training time in MOS
4) Experience in MOS

6.1.3 Storage Sites

Select and ensure the availability of outdoor storage sites that meet the requirements of installation (post or test site) regulations.

NOTE: 1. Igloo storage shall be limited to existing facilities.
2. Field storage sites, simulating combat conditions, shall include locations in proximity to firing (launch) areas for realistic simulation of wartime storage and supply problems.

3. See Section III, TM 9-1300-206, for discussion of safety requirements connected with storage in theater of operations. When these requirements are in conflict with installation regulations, a waiver will be obtained before any testing is begun. See AMCR 385-224 for waivers pertaining to installations under control of US Army Materiel Command and TM 9-1300-206 for those in other commands.

6.2 TEST CONDUCT

6.2.1 Storage

a. Prepare 10 test items for storage in each of the following environments as described in their test plan:

1) In field storage simulating combat conditions.
2) On organic unit vehicles provided for transportation and storage.
3) In a zone of interior conditions (for comparison).

b. Store the test item for three months and during storage, perform the following, as applicable:

1) Operate the transport vehicles during field exercises and convoy operations over varied surfaces as follows:

a) 1,000 miles of improved roadways
b) 350 miles of gravel and unimproved roadways
c) 50 miles of cross-country

2) All normal maintenance.
3) At two-week intervals or as directed for a minimum of six times:

a) In-container checks
b) Assemble the missile including warhead mating
c) Perform a simulated countdown and launch

c. Ensure the test item containers are exposed to all environmental conditions including the following:

1) Low temperature
2) High temperature
3) Wind
4) Precipitation
5) Blowing dust and sand

d. Record and photograph any special precautions taken, problems, or deficiencies observed while maintaining and checking the test item during field storage.

6.2.2 Preparation for Launching

Following the storage period, prepare five test items (with a minimum Instrumentation and Range (I&R) package) from each type of storage for live countdown and launch.

6.2.3 Launching

a. Fire the prepared test item with minimum I&R packages for accuracy evaluation as described in the applicable sections of the applicable MTP.
b. Record and photograph all problems and deficiencies resulting from field storage (if possible).

6.2.4 Human Factors Evaluation

Determine the effects of field storage on the man-test item relationship as described in the applicable sections of MTP 5-3-507.

6.2.5 Safety

Determine the effects of field storage on the safety of the crew-test item as described in the applicable sections of MTP 5-3-510.

6.3 TEST DATA

6.3.1 Preparation for Test

6.3.1.1 Preoperational Inspection and Physical Characteristics

Record data, as described in the applicable sections of MTP 5-3-500.

6.3.1.2 Personnel Training

Record the following for all service personnel:

a. Rank
b. MOS
c. Training time in MOS, in months
d. Experience in MOS, in months

6.3.1.3 Storage Sites

Record the location of all storage sites used.

6.3.2 Test Conduct

6.3.2.1 Storage

Record the following for each manner of storage:

a. Manner of storage (ground, vehicle, igloos, etc.)
b. Number of test items stored in each.
c. Type of transporter.

d. Distance transported, in miles:

1) Over improved roadways
2) Over gravel and unimproved roads
3) Cross-country

e. Time of maintenance, date.
f. Time of in-container checks, date.
g. Problems or deficiencies observed.
h. Precautions taken.
i. All environmental conditions encountered.
j. Difficulties encountered assembling and preparing for simulated countdown and launch.
k. Anomalies in simulated countdown and firing.

6.3.2.2 Preparation for Launching

Record data regarding preparation for launching the test item, to include any problem encountered that would result in a hold condition resulting from field storage.

6.3.2.3 Launching

Record data collected, as described in the applicable sections of the applicable MTP.

6.3.2.4 Human Factors Evaluation

Record data collected, as described in the applicable sections of MTP 5-3-507.

6.3.2.5 Safety

Record data collected, as described in the applicable sections of MTP 5-3-510.

6.4 DATA REDUCTION AND PRESENTATION

a. Compare the results of inspections made before storage with inspections made during the storage period and those made prior to launching the test item.

b. Compare the accuracy and overall effectiveness of test item launched after being in field storage with the results of test items launched after zone of interior type storage. Isolate, analyze, and comment on problems, deficiencies, or shortcomings attributable to field storage.